R E P O R T R E S U M E S

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PREFERENCES OF PRINCIPALS FOR INSTRUMENTAL AND EXPRESSIVE CHARACTERISTICS OF TEACHERS RELATED TO SYSTEM TYPE.

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ELEMENTARY SCHOOL PRINCIPALS PREFER TEACHERS WITH EXPRESSIVE CHARACTERISTICS. THIS WAS THE MAJOR RESULT STEMMING FROM TESTS OF TWO HYPOTHESES--(1) ELEMENTARY PRINCIPALS IN WORKING-CLASS (TYPE W) SCHOOL SYSTEMS, IN CONTRAST TO PRINCIPALS FROM MIDDLE CLASS (TYPE M) SYSTEMS, WILL INDICATE A HIGHER PROBABILITY OF SUCCESS IN THEIR SCHOOL SYSTEMS FOR TEACHERS WITH INSTRUMENTAL CHARACTERISTICS THAN FOR TEACHERS WITH EXPRESSIVE CHARACTERISTICS, AND (2) ELEMENTARY PRINCIPALS IN TYPE M SCHOOL SYSTEMS, IN CONTRAST TO PRINCIPALS FROM TYPE W SYSTEMS, WILL INDICATE A HIGHER PROBABILITY OF SUCCESS IN THEIR SCHOOL SYSTEMS FOR TEACHERS WITH EXPRESSIVE CHARACTERISTICS THAN FOR TEACHERS WITH INSTRUMENTAL CHARACTERISTICS. TWELVE SCHOOL SYSTEMS (SIX TYPE W AND SIX TYPE M) IN THE ST. LOUIS METROPOLITAN AREA WERE SELECTED FOR STUDY. STUDENT TEACHER EVALUATION FORMS WERE CONSTRUCTED AND SENT TO 72 ELEMENTARY SCHOOL PRINCIPALS IN THESE SYSTEMS. FIFTY-SIX USABLE REPLIES WERE RETURNED, 29 FROM TYPE M AND 27 FROM TYPE W. A THREE-WAY ANALYSIS OF VARIANCE WAS PERFORMED WITH THE "PROBABILITY OF SUCCESS" RATING ASSIGNED BY PRINCIPALS TO EACH TEACHER AS THE DEPENDENT VARIABLE AND "SYSTEM TYPE," "TEACHER TYPE," AND "LEVEL TAUGHT" AS THE INDEPENDENT VARIABLES. THE RESULTS INDICATED THAT THE TWO HYPOTHESES DID NOT HOLD, BUT THAT BOTH TYPES OF SYSTEMS CLEARLY EXPRESSED A HIGHER PROBABILITY OF SUCCESS FOR TEACHERS OF THE EXPRESSIVE TYPE THAN FOR INSTRUMENTAL TYPES. THIS PAPER WAS PRESENTED TO THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION (CHICAGO, ILLINOIS, FEBRUARY 8-10, 1968). (HW)

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Preferences of Principals for Instrumental and Expressive Characteristics of Teachers Related to System Type

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instruction. In one subject field after another, teaching ideas have been re-appraised and updated. Now, as the light of the social sciences is beginning to illuminate our traditional attitudes about the social education of the child, the emerging curriculum – at least as it is described in words – is a high celebration of what the goals of human enterprise can be. The task that remains, however, is to devise ways to achieve these goals with greater efficiency and precision.

the solution to one problem often gives rise to new ones

Because of the vagaries of progress, the solving of a problem invariably gives rise to a new one. Once assailed for their old-fashioned ways, schools are now in many instances rushing into new things largely because change has become the fashionable hallmark of the day. It is not that innovation is undesirable. Indeed, the quest for something better must be carried on far beyond the present state of activity. However, once an innovation has demonstrated its value it must be put to practical use. In the hands of a practitioner trained only in old methods, a new technique clearly will fall short of its potential.

abuses of innovation

Other dilemmas confound the task. The casual adding of newness – the specious use of innovative paint to make something old look new – is to be deplored. So too is the contrived invention of gimmicks merely to create artificial differences, and the amateurish or careless abuse of a worth-while innovation through a wanton disregard for the requirements upon which its success depends.

the importance of appraising the way things are

Neither restlessness, tinkering, nor frenetic activity make for genuine improvement. Change and innovation must be ordered by informed judgment, by the fruits of sound reasoning, and by an honest appraisal of the way things are.

PROGRAM

three series of projects

During the 1967-68 period the Center for Coordinated Education will sponsor three series of projects. Each series is geared to the field study of a set of problems and issues, and each is based upon relatively precise targets and specifications.

The series are interrelated insofar as each deals with a major component of school improvement. The first will test a new approach to the professional growth of principals and teachers, the second will experiment with a method of diagnosing weaknesses in the instructional organization of the individual school, and the third will explore the behavior that is a prerequisite to the rational use of innovations.

RATIONALE

The three series of projects reflect assumptions and convictions that stem from the Center's work of the past five years. During this time the staff and its associated field personnel studied a variety of school improvement problems: articulation failures, conflicts in educational objectives, resistance to change, procedures for exploiting the school's capacity for self-renewal, and the dissemination of innovations. It is perhaps significant that with the inception of the present program the Center is reversing its attack. While efforts to learn more about its earlier interests obviously will continue, it seems desirable at this time to retreat to some unfinished business at the very heart of school improvement.

five assumptions

retraining of school staffs

Several reasons support this decision. First, most innovations which make an authentic difference in schooling necessitate the retraining of instructional personnel – a phenomenon about which much too little is known, at least within the constraints of the real world of the school.

unsolved problems

Second, the development of innovations does not always parallel the fundamental problems of schools. For example, should a given school suffer most from the inconsistencies of its instructional program, the fuzziness of its teaching objectives, or the dysfunction of its grading system, the adoption of a popular innovation probably would not remedy its basic ills. Unless a school has a clear understanding of its weaknesses it cannot select intelligently from the available innovations. Nor can it unleash with reasonable direction its own creative energy in solving its problems. It is important, therefore, to find efficient procedures by which a school can accurately diagnose its weaknesses. Third, we do not yet know enough

limited knowledge about introducing innovations

about the degree and kind of preparation that should precede the introduction of an innovation. In installing a new instructional procedure, for example, how much teacher training should deal with the innovation's theoretical underpinnings and how much with the functional techniques it requires? What sort of training should occur before the innovation is introduced and what sort after it is under way? What training requirements do different classes of innovations impose? Since change is likely to be a benchmark of education's foreseeable future, there is obvious benefit in enlarging our ability to help the practitioner shift easily from one method to another. Fourth, the innovative movement in education has become synonymous with the new subject curricula and with a few well-publicized approaches to teaching; flexible scheduling, team teaching, and various methods of individualizing instruction are illustrative. These unquestionably merit the attention they have received but their predominance has tended to obscure the value of other less fashionable innovations and the need for individual efforts to innovate in the solution of local problems. Necessary school improvements frequently are being overlooked in the press to incorporate in school programs the more glamorous elements of the innovative mainstream.

overlooked improvements

implications for leadership

Fifth, both the mechanics of the change process and the growing teacher demand for authentic involvement in instructional policy have important implications for school leadership. To be more specific, the teachers and principal of a school must together play a stronger role in making decisions about the instruction which will go on in the school, and teacher involvement in the decision-making process must be increased. Moreover, these instructional decisions must result from a clear understanding of the school's objectives, a careful analysis of the kind of teaching needed to achieve them, and the use of unequivocal criteria to determine whether or not the goals have been reached. In order to facilitate cooperative decision making of this sort, it will be necessary for the principal either to assume new leadership obligations – abdicating some of his managerial responsibilities – or, in his executive capacity, to utilize outside leadership personnel.

PROJECTS ON THE PROFESSIONAL GROWTH OF SCHOOL STAFFS

The ten projects will test an experimental approach to inservice training. Each will be carried on in an individual school and will involve the entire instructional staff. In order to compare two treatment groups, the principal will act as the leadership agent in half of the cases, and an outside person (an experienced administrator serving as external facilitator) will provide leadership in the other half. The projects on the professional growth of school staffs will seek to learn the comparative benefits of internal and external leadership and the usefulness of an integrated training program for a total school staff. While any topic of general significance to most teachers would serve the purpose of the experiment, the ten faculties will deal with the problem of socializing youth as well as pertinent findings from recent research in the social sciences.

the experimental approach

The Center's experimental approach to professional growth has the following characteristics:

total staff involvement

1. The training program occurs in an individual school and involves the total instructional staff.

the principal's role

2. The principal is engaged in instructional leadership, either as the active training leader or as an executive delegating the task to an outside specialist.

integrated system

3. The major components of classroom instruction: definition of objectives, substantive ideas, teaching strategies, learning processes, and behavioral evaluation are systematically integrated in the training program.

relationship to classroom

4. The training program is task oriented in that the desired professional growth has a direct bearing on events which will take place in the classroom.

increasing consistency

5. The training programs will attempt to achieve greater consistency in the school's instructional program, reducing conflicting teaching goals among teachers, increasing congruence between the teaching objectives and the methods used to achieve them, and generally promoting a better synergy in the school organization.

PROJECTS ON THE DIAGNOSIS OF SCHOOL WEAKNESSES

The projects on the diagnosis of school weaknesses will test a method of achieving efficient school improvement. They are based on the assumption that most organizations have weaknesses which can be identified and corrected. As in the other series, the projects will be organized into two treatment groups so that principal and external facilitator leadership can be contrasted.

The project procedure requires that a school staff, acting as a corporate body, compare the student's actual achievement of learning objectives with anticipated achievement. In short, the procedure is an appraisal of teaching efficiency.

determining specific weaknesses

It is hypothesized that this comparison will illuminate specific weaknesses which can then be corrected. Thus the usual approach to school improvement is altered in several ways: the process takes place in the individual school and necessitates the involvement of the entire teaching staff; the school principal or his external agent is pretrained to lead the diagnosis; deficiencies in the existing instructional program are determined before the issues of means and goals in improvement are considered; and, lastly, the approach deals in specific behavioral outcomes rather than generalities. Since it is difficult to diagnose every facet of the instructional program in a single experiment, each participating school will select particular aspects of its program for analysis. In this way, the Center will give primary attention to the diagnostic process, with the ultimate aim of developing a procedure that can be used by all schools.

diagnostic procedure

The diagnostic procedure will use the following sequence of analysis:

clarification of purpose

1. Clarification of Purpose

a. Specifying three types of objectives in a selected aspect of the program:

general objectives: schoolwide aims that each teacher works toward. For example, encouraging students to acquire valid evidence to support their opinions.

specific objectives: learning to be accomplished in a particular lesson through a specific activity. For example, the ability to express ratios through graphs.

cumulative objectives: learning which leads to a progressive enlargement of knowledge and skill and which depends upon the cumulative efforts of more than one teacher. For example, reading skills, computational skills, and the ability to synthesize information.

b. Determining the extent to which these objectives are understood and endorsed by each teacher on the school staff.

appraisal of purpose

2. Appraisal of Purpose

a. Judging the work of the identified objectives

b. Considering alternate objectives

evaluation of instruction

3. Evaluation of Instruction with Reference to Stated Objectives

a. Specifying anticipated teaching outcomes

b. Identifying teaching tactics used in each classroom to achieve the stated objectives

c. Assessing actual teaching outcomes (through achievement tests, behavioral evaluations, and similar measures)

4. Diagnosis of Factors Accounting for Differences Between Anticipated and Actual Teaching Outcomes

a. Factors relating to subject matter (what is taught)

b. Factors relating to teaching methods (how it is taught)

c. Factors relating to sequence (when and where it is taught)

planning improvements

5. Planning Improvements to Reduce Differences between Anticipated and Actual Teaching Outcomes

a. Specifying precise difficulties

b. Comparing alternative correctives

c. Selecting the best corrective

d. Specifying the requirements for installing the corrective program (materials, training, public relations, political strategies, school reorganization, and so on)

e. Establishing the sequential steps in installing the corrective

f. Determining criteria for evaluating the content of the improvement

objectives

In sum, through its projects on the diagnosis of school weaknesses, the Center will seek to determine the usefulness of the diagnostic procedures outlined above, the capacity of school faculties to plan systematic improvements, the effects of diagnostic activity on teacher attitudes toward their work situations, and the comparative advantages of internal (principal) and external (facilitator) leadership in diagnosing instructional weaknesses and installing improvements.

PROJECTS ON THE UTILIZATION OF INNOVATIONS

The eleven projects on the utilization of innovations are related to the series on diagnosis and on professional growth. They are designed to increase knowledge about the rational use of innovations. As in the other series, primary emphasis is on the processes involved. Comparisons between internal and external leadership will again be drawn.

pre-installation strategy for innovations

Notably, the projects provide for the preparatory activities which should precede the installation of an innovation rather than for the actual installation itself. Future experiments will compare schools in the present projects with others that have not engaged in a formal preparation program. The projects will allow a school to prepare for the installation of an innovation by means of a strategy which includes:

a. Specifying the expected benefits of the innovation

b. Judging the appropriateness of the innovation to the particular situation

c. Verifying the presence of conditions essential to the effective use of the innovation

d. Determining the necessary retraining of the professional staff

e. Determining the required materials

f. Anticipating the effects of the innovation on other aspects of the instructional program

g. Specifying necessary changes in the school organization

h. Establishing a systematic procedure for introducing the innovation

Through analysis of variations in the preparation activities in the projects, the Center will seek to learn more about several issues of importance to educational improvement:

issues regarding innovation

a. The kind and degree of information a teacher should have about an innovation prior to its actual adoption

b. The optimum balance between pre-installation training of teachers and training synchronized with practice after the innovation has been introduced

c. The optimum balance in the teacher training program between the theoretical principles underlying the innovation and the practical techniques it uses

d. The degree to which the teacher should be allowed to work autonomously with the innovation rather than follow prescribed tactics

differences in innovations

It is obvious that innovations are not of a single order. Innovations in subject matter pose problems different from those in school organization or teaching method. Some changes are accomplished through minor adjustments, whereas others demand total revision. Moreover, it would be folly to assume that all schools are the same. Faculties vary in sophistication, energy, and receptivity to change. School principals differ in their leadership styles, personalities, and educational beliefs. For these reasons, strategies for introducing a new program probably ought to vary according to the kind of innovation, the nature of the faculty, and the work style of the principal. In light of this assumption, the Center will explore the possibility of classifying individual schools on a scale of changeability. It will also attempt to relate specific change strategies to different classes of innovations.

THE METHOD OF EXPERIMENTATION

experiments in the actual school setting

The experimental method employed by the Center is based upon an amalgamation of standard research designs, quasi-experimental techniques, and a system of hypothesis testing based upon the recording and analysis

of field observations. This approach differs from the usual experimental method in several ways. First, each project is an experiment in an actual school setting rather than in an artificial situation. Thus there is an opportunity to examine the diverse forces which bear upon the school improvement process.

analyzing success and failure

Second, the Center is less interested in the success or failure of the experiments than in understanding the causal factors. Although demonstrable improvement admittedly is a source of satisfaction, a careful analysis of failure often yields worth-while returns. Experience has shown that the intrinsic value of an innovation can be tempered by many elements. What works admirably in one school may be a patent failure in another, merely because different conditions exist. We have learned that even an irrational procedure can be used successfully if it is buttressed by a sufficient array of compensating support. For these reasons we are not satisfied with a mere appraisal of the success of a given project; we wish to learn also the whys and wherefores.

processes of improvement

Third, although the Center engages in the design and dissemination of innovations, these are vehicles to a larger end – that of learning more about the processes of installing improvements in schools. We are convinced that an intelligent system of school improvement can be devised so that change is less haphazard and innovations are used more rationally.

analysis through field observation

Fourth, the experimental projects are evaluated by an analytical procedure, containing both formal and informal elements, which combines a method of field observation with controlled treatments. Fifth, the experimental projects stem from the identification of a relatively common operational weakness in schools and from an accompanying effort to apply pertinent research evidence, rather than from some other point of departure.

identification of organizational weak points

This experimental method is relatively simple. A facet of the school operation – involving perhaps administration, instruction, or curriculum – is subjected to study and appraisal, during which weak points are identified. A weak point is defined as any significant difference between the organization's expected achievement and its actual achievement. These weak points are then analyzed to verify the exact problem and to gather information about

the conditions which nurture it. An experimental improvement project is then devised. In developing the project, care is taken to specify the precise objectives, the precise procedures through which they are to be achieved, and the hypotheses which are to be tested. In an experimental method of this sort, it is essential to carry on many repetitions of each improvement project. Through multiple replications, judgments about the hypotheses can be based upon accumulated evidence, and reasonable inferences can be made. The method is based in part upon the earlier work of Guba, Stufflebeam, Campbell, and Stanley.

design of projects

Since we are interested in specific cause and effect relationships, in a better understanding of conditions that favor rational improvement, and in procedures for installing tested innovations efficiently, the Center uses a five-phase program of analysis.

THE DESIGN OF SCHOOL IMPROVEMENT PROJECTS

Phase 1 – Analysis of the Situation

In the initial phase the objective is to gather as much evidence as possible about the target situation. What is the exact problem? What circumstances created it? What restrictions must be respected in devising a corrective tactic? What problems may result from disturbing the status quo? What elements may weaken the corrective? In essence, the first phase is devoted to a comprehensive analysis of the problem and the situational factors which surround it.

analysis of the situation

Phase 2 – Analysis of Alternatives

Once weaknesses are isolated, many corrective devices can be employed. In Phase 2 the task is to examine alternative solutions, compare the relative merits of each, establish criteria on which to base a choice, and ultimately to select the best solution. It is necessary in this phase to study pertinent literature, solicit clues from recent research, collect ideas from efforts to deal with similar problems elsewhere, and generally do whatever is necessary to ensure a well-structured experimental project that

analysis of alternatives

attempts to improve a specific weakness and permits a study of the improvement process itself. In conjunction with its activities, the Center will explore the possibility of devising a decision-making strategy which will permit school agencies to use a specific process to select the most appropriate alternative for improvement.

Phase 3 – Analysis of Hypotheses

formulation of hypotheses

Phase 3 completes the preliminary activity which takes place before the project is actually launched. It is the phase in which base line data are gathered, hypotheses which can be verified through observation are formulated, and the mechanics of the evaluation program are organized.

Previous experience has shown that there are limitations to a random recording of observations in a "see what will happen" gambit. Conversely, since school improvement is an exceedingly complex phenomenon, there also are limits to the "pure" data secured by isolating and controlling variables and taking appropriate measurements. The hypotheses (derived from past experience, current theory, and the elements of the problem under study) provide a pattern for appraising the experiment and give the field study some focus and control. Inasmuch as the same hypotheses are examined in a number of situations by a variety of observers, consistency in judgment is construed as an indication of authenticity.

Phase 4 – Analysis of Processes

recording of events

The fourth phase involves a detailed recording of the events that occur during the project's operation. A school improvement plan, when designed before the fact, is invariably modified in light of what takes place after it is put into operation. It is therefore desirable to analyze carefully what actually happens. Evidence on the hypotheses is systematically gathered and conjoined with the data procured through standard measurement procedures. Notably, as the analysis proceeds, it is sometimes necessary to establish new hypotheses, or to modify either the objectives, the means for their achievement, or both. As in several other facets of the field study strategy, the availability of tested procedures

is scant. The Center will attempt to design and test a variety of devices for acquiring and logging the events that occur and for analyzing their implications.

Phase 5 – Analysis of Consequences

interpreting accumulated evidence

The closing phase deals with the "So what?" question. It is concerned with an interpretation of the accumulated evidence and with an analysis of relationships among the multivariant factors. If things go well, it is possible in Phase 5 to identify connective tissue between the situational factors noted in Phase 1, the processes used in Phase 2, the judgments made in Phase 3, and the events recorded in Phase 4. The final task is to draw useful inferences and generalizations which can be used to deal with problems of school improvement.

RESEARCH DESIGN

research design: projects on professional growth

In addition to the field research method described above, a typical research design will be used in each of the three series of projects. While a complete description of the methodology would not be appropriate here, it may be worth-while to describe its major features. The projects on professional growth will use a modified pretest-posttest design. In lieu of a control group, two treatment groups will be used. Both will be selected randomly. The design has the following form.

R	O_1	X_1	O_2
R	O_1	X_2	O_2

Treatment X_1 consists of the principal facilitator combination. Treatment X_2 consists of the principal alone. The O_1 and O_2 are pre- and post-measures on the criterion variables. The R denotes a randomization of the treatments. The school is the unit of treatment. School means are basic observations and treatment effects are tested against variation in those means. The statistical analysis will be a covariance design with the pretest scores as the covariate. While there are serious restrictions to the design – particularly the lack of a control group –

several compensating mechanisms will be used. The criterion measures will include three tests of knowledge, two attitudinal measures* and a variety of unobtrusive measures.

research design: projects on the diagnosis of weakness and projects on the utilization of innovations

The projects on the diagnosis of weakness and utilization of innovations are similar to those on professional growth in that the schools again are the basic unit of analysis. Two treatment groups will be used in lieu of a control group. The treatment groups again are selected randomly. Some aspects of the study will use the pretest-posttest design described previously, while others will use a modified posttest-only, control-group design. The form of the latter is as follows:

$$\begin{array}{ccc} R & X_1 & O_1 \\ \hline R & X_2 & O_2 \end{array}$$

Treatment X_1 is the principal-facilitator and treatment X_2 is the principal alone. The O_1 and O_2 are criterion measures. The statistical analysis will consist of t-tests and analysis of covariance where appropriate. The unobtrusive measures and the attitude study will follow a pattern similar to that in the first series.

The criterion measure for the diagnostic process is a Q-sort analysis applied both to the system used to generate the diagnosis and the diagnosis itself. The criterion measure for the utilization of innovations project is a Q-sort analysis of the innovative procedures devised by the schools.

The rationale of the experimentation is perhaps best summarized by listing the questions which gave rise to the experimental projects.

twelve questions

1. What kind of behavior must principals display in order to function as instructional leaders for their staffs?

2. What are the consequences of using an external facilitator to perform a specific task?

3. Will an aggressive approach to instructional leadership change teachers' attitudes toward principals?

* Adjective Check List, Semantic Differential

4. Do principals vary in their ability to make effective use of facilitators?

5. Is an integrated program of professional growth (one which coordinates specified objectives, teaching tactics, substantive ideas, pupil activities, and evaluation in a cohesive unit) for the total school staff effective?

6. Can school faculties identify their own organizational weaknesses?

7. Does the diagnosis of organizational weakness increase a school's willingness to improve and innovate?

8. Can a useful method of diagnosing weaknesses in a school's instructional program be designed?

9. Is an external agent particularly effective in helping a school staff identify instructional weaknesses?

10. Do schools differ in their capacity to make rational use of innovations?

11. Can specific strategies be used to install various classes of innovations?

12. What steps are essential in preparing a school faculty to make effective use of an innovation?

SUMMARY

Several million words have already been written about educational change. It has become a subject in considerable vogue, with its own mystique, lexicon, retinue, and myths. Hopefully, the Center's program for the forthcoming year is a valid enterprise, born and bred out of a realistic need and a legitimate method. To aid in the prosecution of the projects, three supporting studies will be conducted. These will deal with the professional growth of teachers, instructional leadership, and the management of school improvement.

The Center's program (to make use of a familiar label) is developmental research, in the sense that it will draw upon a great number of theoretical ideas and a substantial body of tested knowledge in an effort

to engineer processes which have widespread usefulness. In this regard a debt must be acknowledged to the earlier work of Bennis, Zetterberg, Chin, Jones, Benne, Carlson, Miles, Lippitt, Bauer, Clark, Brickell, Guba, Goodlad, Tyler, Argyris, Gagne, and many others.

comprehensive approach to change

The design of the projects reflects an eclectic amalgamation of available theory. The focus upon the individual school, for example, makes it possible to fit the strategies to the particular situation and to deal with matters in their actual context. Since authentic school improvement requires a shift in the attitudes and values of the practitioner, an accurate understanding of the problem to be overcome, a demonstration of the utility of the solution, and adequate technical information regarding the use of the solution — all these are incorporated in the project design. Because power is an undeniable force in change, the projects take advantage of the principal's superordinate role. At the same time, however, the involvement of the total school staff ensures that interrelationships among people and the particular concerns of the individual are not ignored.

From a theoretical point of view, the projected program has a number of distinct advantages: the strategies for professional growth, diagnosis of organizational weakness, and rational use of innovations will be tested in actual situations; the program itself represents a controlled experiment with a promising approach to the field study of educational problems; and the proposed projects will permit the staff to seek three important byproducts: (1) a method of linking specific

anticipated byproducts

installation procedures to specific innovations, (2) a device through which a school's potential for effective change can be assessed, and (3) additional knowledge on the use of external agents in the improvement of a school.

To the skeptical these experiments may seem no more than a contrivance to prove what common horse sense would have suggested in the first place. However, to use an old analogy, there are no horses around who can preside over the improvement of schools. The transformation of a weak organization into a strong one is an enormously

complicated task. Moreover, it is a task that can become an art in its own right if enough can be learned about influence and incentive, leadership, professional growth, and the things that make for a truly potent classroom. Ahead of us are the massive potentials of computerized instruction, automated instructional systems, and a vastly enriched storehouse of learning materials. It is in human power – perhaps for the first time in man's history – to achieve an educational system that far exceeds our wildest imaginations. Despite the changes that have thus far transpired, the real revolution is yet to come. As it does, it ought to be directed by informed intelligence rather than naive assumptions.